

PERZELY, GYORGY A.

V. Perzely, György, A budapesti pentad-hőmérsékletek egyenlőtlenségi görbéinek vizsgálata.
[Study of frequency curves of pentad temperature at Budapest.] Budapest, 1955. 100
pages. Budapesti tudományos közlönyek. (Issued as *Literary*. *Országos Művelődési Intézet, Híradó*.
Kiadásai, Vol. 20, no. 1945, p. 173-196. 2 figs., 3 tables, 5 refs., 1 ref. Russian and
French summaries p. 173. D #11- Deviations from normal of pentad temperature are calcu-
lated for each 5-day period from 1851 to July 1955. In a second table the statistical parameters
of the pentad temperatures are given (arithmetic mean, variance, standard deviation and
probability of normal frequency distribution). A third table contains components of pentad
temperature frequency curves. A curve of the annual march of standard deviations of pentad
temperature (with 13 marked singularities identified and commented on) and a smoothed
curve of annual variations in radiation conditions (Budapest, 1851-1950) are presented.
Subject Headings: 1. Temperature data. 2. Radiation data. 3. Climate of Hungary. 4. Tem-
perature singularities. 5. Budapest, Hungary. G. 7.

PECZELY, GYORGY

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✓ 80-68
 Peczely, György. A téli évszak makroszinoptikai előrejelzésének néhány problémája. [A few problems in macro-synoptic forecasting for the winter season.] *Hetényi és 1955-ben kiadott tudományos közlemények Hosszú és Hosszú. Országos Meteorológiai Intézet, Hivatalos Kiadványai.* Vol. 20, sub. 1955). p. 120-227. 5 figs., 3 tables. Russian and German summaries p. 220. DWH
 —Atlantic pressure charts (surface and 500 mb) for Jan. 11-18, 1950 and a chart of anticyclone tracks for Jan. 11-26 appear to indicate a close relationship between polar outbreaks over America and anticyclones over Scandinavia which, in turn induces winter weather in Hungary. Possible connections with Siberian cold centers are also discussed. *Subject Headings:* 1. Atmospheric circulation anomalies. 2. Long range forecasting. 3. Hungary.—G.T.

551.509.3:551.519.7

2-1-1

EE

Excerpt, PÉCELV, G.

8.1-233 551.524.36:551.576.36(439.1)
 Pécelv, György. A hőmérséklet és a felhőzet együttes gyakoriságának vizsgálata. [In-
 vestigation of combined frequencies of temperature and cloudiness.] *Időjárás, Budapest*,
 19(2):80-83, March/April 1958, figs., 3 tables, ref. Russian and French summaries p. 82.
 0744. Combined frequencies of daily mean temperature and cloudiness in Budapest are
 investigated for each month of the period 1901-1950. Temperature and cloudiness values
 are classified into 10 types. The annual variations of these types and their relation to pre-
 vailing general synoptic situations are analyzed. The types are found to lack uniformity
 from a synoptic point of view. *Subject Headings:* 1. Temperature frequencies 2. Cloud
 frequencies 3. Budapest, Hungary - Trans. of author's abstract.

Ex
unif

PECZELY, GY.

Typifying macrosynoptic situations for Hungary. p. 212
IDOJARAS. Budapest. Vol 59, no. 4, July/Aug. 1955

SOURCE: East European Accessions List (EEAL), LC, Vol. 5, No. 2, February 1956

PECZELY, GY.

The itinerant congress of the Hungarian Society of Meteorology held in
Szeged. p. 209.
IDOJARAS. Budapest. Vol. 59, No. 4, July/Aug. 1955

SOURCE: East European Accessions List (EEAL), LC, Vol. 5, No. 2, February 1956

PECZELY, GY.

Changes in the temperature of the earth. p. 275

Vol. 59, no. 5, Sept./Oct. 1955
IDOJARAS
Budapest

Source: Monthly list of East European Accessions, (EEAL), LC,
Vol. 5, no. 3, March 1956

Péczely, György

2

8.3-127

551.509.118.551.524

Péczely, György. Adatok Magyarország makroszintű helyzetének hőmérsékleti viszonyairól. [The thermal conditions of large-scale synoptic situations in Hungary.] *Időjárás*, Budapest, 60(2):2-81, March/April 1956. 1 fig., 6 tables, 4 refs. Russian and German summaries p. 71. English version p. VI-XII. DLC—Fifteen types of large-scale synoptic situations are established. Monthly averages of mean daily temperature at Budapest are given for each synoptic type on the basis of a 60-year record. The monthly means related to each type are expressed in terms of Köppen's relative temperature and compared with annual variations at a coastal and a continental station by using the χ^2 test. For anticyclones persisting 5 days the average temperature change is computed as an indication of air-mass transformations. *Subject Headings:* 1. Large scale weather processes. 2. Synoptic situations. 3. Mean diurnal temperatures. 4. Hungary. *Trans. of author's abstract.*

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PECZELY, GY.

Temperatures in February 1956 in the light of climatologic probabilities.
p. 115. Vol. 60, No. 2 Mar/Apr. 1956. Budapest, Hungary. IDOJARAS.

SOURCE: East European List, (EEAL) Library of Congress Vol. 6, No. 1
January 1956.

PECZELY, GYÖRGY A.

See
 Peczely, György. A -10°C alatti napi középhőmérsékletek székelyi menetéről. [Seasonal variations of daily mean temperatures below -10°C .] *Időjárás*, Budapest, 60(3):178-180, May/June 1955. table, eqs. 1/1C--Number of days with mean temperature below -10°C in Dec., Jan. and Feb. are tabulated for each winter from 1861 to 1954. The last four decades of the 19th century are found to show a larger number of such days than the first four decades of this century, and a test shows that the difference is statistically significant. After the late thirties the number of days with means below -10°C has been increasing but winter temperatures in general have not shown a corresponding decrease. *Subject Headings*: 1. Frost frequencies 2. Temperature trends 3. Hungary.--G.T.

referred to.

Application of the analysis of frequency distribution to meteorology,
p. 110, 110-111, (Meteorologiai Intezet és Magyar Meteorologiai
Társaság) Budapest, Vol. 60, No. 3, May/June 1976

SOURCE: East European Academic List (EAL) Library of Congress,
Vol. 5, No. 11, November 1976

PECZELY, GY.

General Meeting of the Hungarian Society of Meteorology in 1956.
p. 192. IDOJARAS. (Meteorologiai Intezet es Magyar Meteorologiai
Tarsasag) Budapest. Vol. 60, no. 3, May/June 1956.

SOURCE: East European Accessions List (EEAL) Library of Congress.
Vol. 5, No. 11, November 1956.

PECZELY, GY.

PECZELY, GY. Franz Reur's Physical-Statistical Rules Serving as a Basis for Weather Forecasting; a book review. p. 259.

Vol. 60, No. 4, July/Aug. 1956

UDCJAS

SCIENCE

Budapest, Hungary

So: East European Accession, Vol. 6, No. 2, Feb. 1957

PECZELY, György

✓ 10.3-22 551.509(439.1) 551.509.312 2
 *Pécsely, György. Grosswetterlagen in Ungarn. [Large scale weather situations in Hungary.] Hungary. Országos Meteorológiai Intézet, Kiseb Könyvtára, No. 30, 1957. 86 p. tables, 4 refs. On t-p: Kleinere Veröffentlichungen der Zentralanstalt für Meteorologie, Budapest. DWB (M(555) H936ki)—A catalog of large-scale synoptic weather situations for each day of each month from 1877 to 1955 is accompanied by a description and illustration (with synoptic charts) of each type and an analysis of the frequency, duration and singularities in the respective types. Geographic and climatological as well as synoptic consideration are incorporated. Subject Headings: 1. Macrosynoptic weather catalogs 2. Synoptic climatology, Hungary 3. Large scale weather processes 4. Hungary.—M.R.

GW

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August 3, 1959

PEGZELY, Gy.

Frequency of duration of anomalies of temperature. p. 54. (Idojaras, Vol. 61, No. 1, Jan/Feb 1957, Budapest, Hungary)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 8, Aug 1957. Uncl.

FECZELY, Gy.

Complex meteorologic characterization by means of the combination of meteorologic elements. p. 22. (Idojaras, Vol. 61, No. 1, Jan/Feb 1957, Budapest, Hungary)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 8, Aug 1957. Uncl.

PECZELY, GY.

Are there any mediterranean characteristics in the precipitation of Hungary?

p. 95 (Idejaras. Vol. 61, no. 2, Mar./Apr. 1957. Budapest, Hungary)

Monthly Index of East European Accessions (EEA) IC. Vol. 7, no. 2,
February 1958

PECZELY, GY.

"Data on the cooling effect of snow layers." p. 329

IDOJARAS. (Meteorologiai Intezet es Magyar Meteorologiai Tarsasag)
Budapest, Hungary, Vol. 62, No. 6, Nov./Dec. 1959.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 6, June 1959
Uncl.

PECZELY, GY.

SCIENCE

PERIODICALS: ~~ACTA ZOOLOGICA Vol. 62, No. 3, May/June 1958~~
IDOJ.RAS. Vol. 62 No. 3, May/June 1958

Peczely, Gy. The 1958 General Assembly of the Hungarian Meteorologic Society.
p. 186

Monthly list of East European Accessions (EEAI) LC, Vol. 8, No. 2,
February 1956, Unclass.

PECZELY, GY.

"Air pollution in Budapest in various macrosynaptic conditions." p. 19.

IDOJARAS. (Meteorologiai Intezet ex Magyar Meteorologiai Tarsasag).
Budapest, Hungary, Vol. 63, No. 1, Jan./Feb. 1959.

Monthly list of East European Accessions (EEAI), LC, Vol. 8, No. 8,
August 1959.
Uncla.

PECZELY, GY.

Unusual forenoon darkness in Budapest on March 16, 1959. Pl 118

IDOJARAS. (Meteorologiai Intezet es Magyar Meteorologiai Tarasag)
Budapest, Hungary, Vol. 63, No. 2, Mar./Apr. 1959

Monthly List of East European Accessions, (EEAI) LC, Vol. 9, no. 1 Jan.
1960 Uncl.

PECZELY, Gyorgy

Data on the temperature of the Kulso basin at Tihany. Idojaras 63
no.6:369-371 H-D '59. (EEAI 9:10)
(Hungary--Atmospheric temperature)

PECZELY, Gyorgy

Protective effect of the Carpathian Mountains in case of a north-eastern inrush of cold. Idojaras 64 no.1:28-34 Ja-F '60.

(EEAI 10:1)

(Europe, Eastern--Climate)

(Carpathian Mountains)

PECZELI, Gyorgy

Frequency of the Sub-Mediterranean type precipitation course in
Hungary. Idojaras 64 no.6:342-347 '60. (KEAI 10:7)

(Hungary--Precipitation (Meteorology))

PECZEKY, Gyorgy

Data on the local wind system of the Lake Balaton. Időjárás
65 no.6:362-364 D '61.

PECZELY, Gyorgy

"Climat of the Rumanian People's Republic.Vol.2. Climatological
data" by S.M.Stonescu. Reviewed by Gyorgy Peczely. Időjaras 65
no.6:372 D '61.

KERI, M., Dr.; PECZELY, Gy.

The 2d Carpathian Meteorology Conference held in Budapest.
Idojaras 65 no.6:374-382 D '61.

1. Szerkeszto Bizottsag, "Idojaras" (for Keri).

L 9850-66 EWT(s)/FCC/T IJP(c)

ACC NR: AP6001043

SOURCE CODE: HU/0033/65/069/002/0105/0107

AUTHOR: Pecseny, Gyorgy

ORG: none

TITLE: Indirect determination of the distribution of wind velocity probability

SOURCE: Idojaras, v. 69, no. 2, 1965, 105-107.

TOPIC TAGS: wind velocity, probability

ABSTRACT: [Author's English summary, modified] It was proven that for a given station, s , the probability distribution function of the wind velocity generally expressed by the equation $P(x > X) = F_s(X)$ can be done invariant against the variations of s if the transformed expression will be given by equation $P(x^* > X^*) = F_s(X^*)$, where $X^* = X/\bar{x}$ (\bar{x} representing the arithmetical means of the population) in which the term X^* is substituted. On the basis of wind velocity probability functions calculated from the data of 10 observation stations in Hungary the function form will be determined, by the aid of which the probability distribution of the wind velocity can be given by indirect means for each station provided that the mean wind velocity is known. Orig. art. has: 1 figure, 3 formulas, 3 tables. [JPBS]

SUB CODE: 04 / SUBM DATE: none / ORIG REF: 004

Card 1/1

SERESTYEN, Laszlo (Jr) (Budapest, IX., Torma u.14. I.1., telefon.141-818);
PECZELY, Ignac (Szentgal); BALOGH, Imre (Budapest)

Radio operators are talking. Radiotechnika 13 no.5-183 My '63.

PECZELY, Peter

Examination of the neurosecretion of ecologically differing bird species. Biol kozl 11 no.1:45-49 '63.

1. Eotvos Lorand Tudományegyetem Általános Állattani és
Összehasonlító Biológiai Tanszéke, Budapest. Tanszékvezető:
Dr. Modlinger Gusztáv.

HUNGARY

PECZELY, Peter; Department of General Zoology and Comparative Anatomy (Altalanos Allattani és Összehasonlító Bonctani Tanszék) of ELTE [Eotvos Lorand Tudományegyetem -- Eotvos Lorand University] (chairman: MODLINGER, Gusztáv, Dr), Budapest.

"Examination of the Neurosecretion of Birds of Various Ecological Types."

Budapest, Biologiai Közlemények, Vol XI, No 1, 1963, pp 45-49.

Abstract: [Author's Hungarian summary modified] Birds belonging to various ecological types show characteristic differences in their neurosecretion which are related to their environment. Xerotypes are characterized by intensive neurosecretion which indicates a well-developed water retention ability. Hygrotypes consume large quantities of water along with their food, thus, they need to excrete excessive quantities of water. The activity of neurosecretory cells is low and the excreted fluid is accumulated in form of droplets. The neurosecretory activity of mesotypes is intermediate between the activities of the two other types. All 5 references are Western.

POZNY, I.

The adaptation of the ...
in various bird species ...
1974-79 ...

1. Department of General ...
State ...
C. Salinger

17021, F. Peter

Effect of the bird's position on the development of
cervical vertebrae. *Avia* 69/11:131-141, 1974-1975.

1. Institute of General Biology, Director: Prof. J. L. L. L.
Modirger, of Grand Szeva University, Budapest.

PECZNIK, Janos, dr., tanszekvezeto egyetemi docens, a mezogazdasagi tudomanyok
kandidatusa (Godollo)

Grape fertilization through the leaves. Term tud kozl 5 no.7:313-315
Jl '61.

COUNTRY : Hungary
 CATEGORY : Agriculture, Horticulture, Forestry, Fishing, Hunting, and Wildlife

ADVISORY : HUNGARIAN, No. 4, 1957, No. 15831

AUTHOR : G. Kovács, János; M. J. J. J. J.
 TITLE : Experiments in Foliar Top-Dressing
 in Viticulture

DATE : 1957, No. 4, 1957, No. 15831

ABSTRACT : Experiments in foliar top-dressing of grapes, carried out at various points in Hungary in 1956, showed that spraying with urea gives the best effect. The two-fold spraying - immediately after flowering and before ripening of the fruit - with a 1% solution of urea led to a 21% increase in the harvest yield of the Gamay sort, a 21 - 31% increase of Furmint, a 38% increase of Italian Kékling; the sugar content was 1% increased in the Italian

HUNGARY/Soil Science. Mineral Fertilizers.

J-3

Abs Jour: Ref Zhur-Biol., No 6, 1958, 24736.

Author : Pecznik, Janos.

Inst :

Title : Some Contemporary Problems of the Application of
Artificial Fertilizers.

Orig Pub: Magyar mezogazd., 1957, 12, No 4, 6-7.

Abstract: No abstract.

Card : 1/1

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ACC NR: AT6024924

system (AMg3, AMg6). A considerable softening of the metal occurs in the heat-affected zone. The modulus of resistance of welded butt joints made by argon-arc welding is 0.5-0.6 of that of the base metal immediately after welding or after aging. Weld joints of V96-type alloys have a lower bending angle than those of other weldable aluminum alloys. The low plasticity of the joints may cause a low structural strength in welded structures. Orig. art. has: 4 tables.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 001

red
Card 2/2

FED', D. A., and FLINIFOV, Z. G.

"Determination of the Components of the Altitudinal Deformational Fields of Natural Synoptic Periods," Meteorol. i gidrologiya, No 10, 1953, pp 33-36

The altitudinal deformational field (ADF) characteristic for a natural synoptic period (NSP) is determined by its components: altitudinal cyclones and anticyclones which exist in the troposphere during the course of the entire NSP. During the disintegration of even one component of the ADF, or with the formation of a new component, a new NSP begins. The authors consider that the altitudinal cyclones and anticyclones traced on the chart AT 500 for the first days (tendency) of the NSP can be components of the ADF period if they correspond to independent thermal foci on the chart from 550/1000 of the same days. The authors investigate whether this condition is sufficient for the data of the altitudinal charts for 127 NSP 1951 and 1952. It turned out that only in 55-70% of all the NSP do the baric formations possessing, in the NSP tendency, independent thermal foci, exist in the course of the entire period. The indicated condition is thus a necessary but not sufficient criterion for the establishment of the components of ADF NSP. The authors found supplementary criteria establishing the relation between duration of existence of baric formations that possess in the tendency of the period independent thermal foci and their intensiveness in comparison with the baric relief surrounding them. (RZhGeol, No 5, 1954)

SO: Sum No. 568, 6 Jul 55

BYALYNITSKAYA, V. G. and PED', D. A.

PED', D. A.

"Formation of Night Frosts in Ukraine."

Problems in Long-range Forecasting, Leningrad, Gidrometeoizdat, 1957.
287 p.

BYALYNITSKAYA, V.G.; PED', D.A.

~~SECRET~~
Circulation method of forecasting frosts in may in the northern
Caucasus. Meteor.i gidrel. no.9:29-31 S '56. (MLRA 9:11)
(Caucasus, Northern--Frost)

Ped', D. A.

AID P - 2497

Subject : USSR/Meteorology

Card 1/2 Pub. 71-a - 7/26

Authors : Byalynitskaya, V. G., and Ped', D. A., Kands. Geogr. Sci.

Title : On forecasting cloudiness for a seasonal period

Periodical : Met. i Gidro., 3, 31-33, My-Je 1955

Abstract : The deficiency of long-range forecasting using average seasonal periods based on synoptic charts is criticized. The authors maintain that the cloudiness over European USSR is formed for the major part by humidity advection connected with atmospheric circulation. The lowest troposphere layer carries the most humidity. The authors also studied the distribution of specific humidity over Central Asia and Siberia. Three tables show the distribution of specific humidity in atmosphere layers in July and the tendency to cloudiness (mean cloudiness) in the seasonal (mean) period for cyclone and anti-cyclone fields. Six Russian references, 1946-1953.

BABKIN, A. V.; PED', D. A.

Characteristics of similarity in natural synoptic periods.
Trudy TSIP no. 127:76-83 '63. (MIRA 17:5)

PED', D. A.; BABKIN, A. V.

Forecasting the anomalies of air temperature in July and August
for the European territory of the U.S.S.R. Trudy TSIP no. 127:
38-66 '63. (MIRA 17:5)

PEDI, D. A.

Statistical method for improving the forecasting of the anomalies
of the mean monthly air temperature. Trudy TSIP no. 127:96-100
'63. (MIRA 17:5)

PROF. D.A.

Some features in the circulation of natural synoptic periods.
Meteor. i gidrol. no.8:28-31 Ag '57. (MLRA 10:8)
(Atmosphere)

PF D, K-1.

BYALYNITSKAYA, V.G.; PED', D.A.

Conditions for first autumn frost formations in the Ukraine. Trudy
TSIP no.49:264-288 '57. (MLRA 10:8)

(Ukraine--Frost)

$P_{\varepsilon} D', D.A.$

1506/108 1012310/1002 15/10 2 20/10

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100-443887-100

Voprosy dolgozrachyba prognoz (Problems in Long-Range Forecasting)
Moscow, Tsentralfny Institut prognoz. 1972. 124 p. (Series: Nauch. Trudy,
vol. 73) 1,100 copies printed.

[illegible]

EA.1 (title page): V.M. Kurganov; EA. (inside book): V.I. Tarubinov;
 Tech. EA.1: I.M. Zarko

Techn. M.L.: I.M. Kozlov
Purpose: This issue of the Institute's Transactions is intended for meteorological and hydrographic specialists working in the field of long-range weather forecasting.

COMMENT: This collection of articles deals with aspects of extended weather forecasting. Individual articles discuss: synoptic conditions of wind fields most favorable to shipping along the Northern Sea Route (Viorist Arvile Seash); synoptic conditions underlying a continuous ice cover in various parts of the Sea of Azov; a method for compiling daily schematic 500-mb contour maps (ZifCOG temperature regime); a method for the advance determination of relative risk for periods of 3, 6, and 72 hours; a method for determining climatic relationships for forecasting air temperature for a natural synoptic period. The results of actual tests in a series of investigations is extended forecasting are cited. References accompany each article.

STEWART & STEWART

SYNOPSIS OF CHANGES:

Part of the Parents and Karakoye Pans during the marriage

Karsina, B.O. Sympyle Conditions of Fronting in Low Sea Level
 Karsina, O.N., and M.M. Chaykina. Compiling Neom Prognostic 500-mb Contour
 Maps for 5 Days

Page 1 of 1

Turkistan, U.S.S.R. Forecasting Pressure Fields in 2-3 days
Turketti, Z.I., and O.M. Yakubova. Computing Prospective Pressure Fields for
2-3 Days

D.A. Fed' and R.M. Al'tovskiy. The forecasting of air temperature for a
long-term period

Abstract: Synoptic Series
Averett, J. L., and T. A. Prudhomme. Results of Utilizing the Findings of
..... in Comparing Extended Weather Forecasts

AUTHORS: Ped', D. A., Fedulova, M. N.

SOV/50-58-8-2/18

TITLE: The Frequency of Planetary Frontal Altitude Zones of the Natural Synoptic Periods (Povtoryayemost' planetarnykh vysotnykh frontal'nykh zon yestestvennykh sinopticheskikh periodov)

PERIODICAL: Meteorologiya i gidrologiya, 1958, Nr 8, pp. 11-16 (USSR)

ABSTRACT: The zones mentioned in the title represent one of the most important factors of the total circulation of the atmosphere. They reach a length of 5 000 - 10 000 km and encircle sometimes an entire hemisphere (Refs 2, 3, 8, 10, et al.). These zones (PFAZ) are characterized by great temperature gradients and wind velocities and form regions of concentration of thermodynamical circulations solenoids and of the most intensive dynamical pressure changes. An uninterrupted transformation of potential energy of the air masses which are to a great extent different in the kinetic energy of the jet circulations (struynye techeniya) and of the vertical movements takes place in the PFAZ. Therefore the precipitations and abrupt changes of the gradients of the wind velocity are frequent in the PFAZ. This is especially important for aviation. Several PFAZ exist on the northern hemisphere (Refs 3, 4, 9, et al.). They are in

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SOV/50-56-6-2/11

The Frequency of Planetary Frontal Altitude Zones of the Natural Synoptic Periods

close connection with each other. Their interaction favors the heat exchange of the air between the zones of latitude and the transformation of the thermobaric fields of the troposphere. In consequence of this interaction the PFAZ flow together in individual sections. The PFAZ show considerable variations according to geographical position, intensity, etc. These fluctuations depend as well on the type of the synoptic process. The investigation of the latter yields the most complete characteristic of the PFAZ. The present paper deals with the theme mentioned in the title in January and July on the strength of average data of the AT_{500} of the natural synoptic

periods. The position and intensity of the PFAZ was determined on the northern hemisphere between the meridians of 30° western latitude and 78° eastern longitude. Table 1 shows that the geopotential of the axis line was approximately conserved. showed, however, in January 77,1% and in July 93,6% of all cases deviations from the mean value (with a tolerance of ± 4 dkm). The amplitude of the deviations amounted in January to 36 dkm, in July to 16 dkm. The mean value of the said ge-

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SOV/50-58-8-2/10

The Frequency of Planetary Frontal Altitude Zones of the Natural Synoptic Periods

potential is increased by 32 dkm from winter to summer. Figure 1 shows the average position of the axis lines of the PFAZ in January and July. Figure 3 shows the curves of frequency of the intensity of the PFAZ. There are 3 figures, 2 tables, and 14 references, 12 of which are Soviet.

Card 3/3

PED', D.A.; AL'TVIRGER, R.M.

Predicting the temperature of the air for a natural synoptic
period. Trudy TSIP no.73:94-99 '58. (MIRA 12:2)
(Weather forecasting)

PED, D. A.

(BP)

PHASE I BOOK EXPLOITATION

SOV/4513

Moscow. Tsentral'nyy institut prognozov

Voprosy dolgosrochnykh prognozov pogody (Problems in Long-Range Weather Forecasting)
Moscow, Gidrometeoizdat (Otd-niye), 1959. 60 p. (Series: Its: Trudy, vyp. 87)
950 copies printed.

Sponsoring Agencies: Tsentral'nyy institut prognozov; Glavnoye upravleniye
gidrometeorologicheskoy sluzhby pri Sovete Ministrov SSSR.

Ed. (Title page): V.P. Nakrasov; Ed. (Inside book): V.I. Tarkhunova; Tech. Ed.:
T. Ye. Zamsova.

PURPOSE: This issue of the Transactions of the Central Institute of Forecasting is
intended for scientific researchers and field workers in meteorology.

COVERAGE: The articles in the collection deal with problems in long-range (3 to 7
days) weather forecasting. Individual papers outline a method of precalculating
the mean air temperature for a natural synoptic period of January using regression
equations, and present suggestions for the application of the field of Laplacians
and temperature advection for predicting the curvature of isohypsal lines in the

Card 1/3

Problems in Long-Range Weather Forecasting

SOV/4513

Sidochenko, T.V., and M.N. Fedulova. Results of the Verification of T.A. Diletova's Rules for Forecasting Upper-Level Cyclones and for Determining the Dates of Natural Synoptic Periods

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AVAILABLE: Library of Congress

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3(7)

SOV/50-59-5-9/22

AUTHORS: Pod', D. A., Turketti, Z. L.

TITLE: Considering Climatological Data in the Evaluation of Weather Forecasts (Uchet klimatologicheskikh dannyykh pri otsenke prognozov pogody)

PERIODICAL: Meteorologiya i gidrologiya, 1959, Nr 5, pp 40 - 43 (USSR)

ABSTRACT: At the All-Union Conference on Long-term Weather Forecasts in Moscow in 1957, the necessity of considering the climatic and seasonal features of the regions in compiling and evaluating weather forecasts was stated. In this connection, the problem of setting up new regulations for the terminology and evaluation of long-term weather forecasts turned up. The consideration of climatic features in the terminology and evaluation of weather forecasts is very complicated and hits on a number of practical difficulties. This applies particularly to tolerances in the evaluation of weather forecasts. This complicated problem of the selection of tolerances has hardly been worked out. The tolerances used at present are not sufficiently founded, and do not express the physical-geographical and seasonal features of

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Considering Climatological Data in the Evaluation of
Weather Forecasts

SOV/50-59-5-9/22

the regions. One of the possible variants for the choice of intervals in compiling weather forecasts for 3-7 days, and of the tolerances evaluated according to the two main elements of the weather - precipitations and air temperature - is put forward here. In establishing the criteria for the evaluation of these elements it is convenient to start from a consideration of the features in the distribution of these elements in the region and depending on the season. The most distinguishing characteristic representing the physical-geographical and seasonal features of the respective region is the variability of temperature and precipitations with respect to time. To determine the tolerances in the evaluation of precipitation forecasts it is suggested to use the data available in the climatological handbooks for the whole area of the USSR. On the basis of the data given here, regions with a number of days with no precipitations were ascertained, namely regions with less than 10 days without precipitations, with 10 to 20 days, and with more than 20 days without precipitations per month. For each of these groups, particular tolerances are to be established for the evaluation of precipitation forecasts. To determine the intervals in air temperature forecasts

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Considering Climatological Data in the Evaluation of
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for 3-7 days and the tolerances in the evaluation of temperature it is convenient to take the variability of the daily average of air temperature every 5 days. Table 2 shows these variabilities. On the basis of such data, charts on the variability of the daily average of air temperature have been compiled for the whole area of the USSR. It is convenient to assume the tolerance with 0.75 of the average air-temperature change over many years. Also the interval in the air-temperature forecasts can be assumed in this way. The tolerance thus chosen will be different for different regions and different seasons. On the other hand, it will be possible to compare the evaluation of the forecast in different places and months. A direct evaluation of the forecasts for different regions showed that it became somewhat lower for regions with a smaller change in temperature, and higher for regions with a greater change in temperature - as compared to the evaluation by the usual method (Ref 3). There are 1 figure, 2 tables and 6 Soviet references.

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3 (7)

AUTHORS:

Ped', D. A., Sidochenko, T. V.

SOV/50-59-9-3/16

TITLE:

On the Cause of Variations in Intensity in the Zonal Circulation of the Atmosphere

PERIODICAL:

Meteorologiya i gidrologiya, 1959, Nr 9, pp 20 - 24 (USSR)

ABSTRACT:

The results of the analysis of intensity variations in the zonal circulation in the atmosphere, as well as the data explaining these variations in a certain degree are put forward here. In the investigation of the circulation in the atmosphere, the indices, the calculation method of which is indicated in the papers (Refs 6,9), were determined here on the basis of the data of 1938-1957. Besides, the values indicated in the paper (Ref 7) were used. Table 1 shows the mean annual intensities of zonal circulation in the atmosphere for 20 years. The lowest circulation index was recorded in 1938, the highest in 1955. The analysis of the connection between the intensity of the zonal atmospheric circulation of the previous and subsequent years and months is put forward. As the atmospheric circulation on the whole terrestrial globe is not considered, these connections are approximated. It is shown that the intensity of zonal circulation of the respective month depends - though

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Zonal Circulation of the Atmosphere

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not to a large extent - on the circulation of the preceding months. It seems that this connection depends on both the inertia and the continuity of the processes. It is attempted here to find a connection between the zonal circulation in the atmosphere and the solar activity. Figure 1 shows the integral curves for the mean annual intensities of zonal circulation in the atmosphere and the integral curves of the mean annual values of the number of R. Vol'f. The number of R. Vol'f is an index of the relative number of sun spots indicating the intensity of the field strength of ultraviolet radiation of the active sun areas. Figure 1 shows a good agreement in the course of the two curves. The synchronous and asynchronous correlation connections were determined in order to establish the good agreement of this course. It was found that there is a very close synchronous connection between the annual values of the intensity of zonal circulation and the numbers of Vol'f. Also the asynchronous connections show high values. - The high correlation coefficients permit the regression equations for determining the integral zonal circulation to be built up according to the integral data of solar activity, which is also

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shown here.- The conclusions obtained for the connection of the intensity of zonal circulation of the atmosphere with the solar activity is apparently peculiar to the circulation of the atmosphere on the whole terrestrial globe, at least to that in the whole troposphere. In default of data, this cannot be proved at present. Table 4 shows that there is also a close connection between the circulation at different levels of the troposphere. This shows that nearly the whole troposphere reacts in the same way on the influence of solar activity.- In conclusion it is said that - although the results put forward here have a preliminary character - they show that the mean annual variations of the intensity of zonal circulation in the atmosphere are determined, to a high degree, by the mean annual variations of solar activity. There are 1 figure, 4 tables, and 15 Soviet references.

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PED', D.A.

Forecasting air temperature for the natural synoptic period
of the month of January. Trudy TSIP no.87:3-25 '59.
(MIRA 12:8)

(Atmospheric temperature)

VOYCHENKO, Pavel Grigor'yevich; ZUBKOV, Aleksandr Yemel'yanovich;
POGOSYAN, Kh.P., prof., retsenzent; ZAMORSKIY, A.D., prof.,
retsenzent; PEK, D.A., kand.geogr.nauk, retsenzent;
DREMLYUG, V.V., kand.geogr.nauk, retsenzent; SAGATOVSKIY,
N.V., red.; LAVERNOVA, N.B., tekhn.red.

[A brief course in meteorology and oceanography for ship
navigators] Kratkii kurs meteorologii i okeanografii dlia
sudovoditelei. Moskva, Izd-vo "Morskoi transport," 1960.
359 p. (MIRA 13:7)
(Meteorology, Maritime) (Oceanography)

ZVEREV, N.I.; PED', D.A.

Determining the degree of analogy between fields of meteorological
elements by the use of the "Pogoda" electronic computer. Meteor.
i gidrol. no.10:14-18 0 '60. (MIRA 13:10)
(Weather forecasting) (Electronic calculating machines)

PED', D.A.; SIDOCHENKO, T.V.

Relationship between the mean monthly temperature anomaly and
atmospheric circulation during the preceding months. Trudy
TSIP no.89:127-149 '60. (MIRA 14:3)
(Weather forecasting)

PED', D.A.; CHISTYAKOVA, Ye.A.

Use of climatic data in making weather forecasts for a month in
advance. Trudy TSIP no.89:158-166 '60. (MIRA 14:3)
(Weather forecasting)

CIESLA, Klara; PEDICH, Wojciech

Effect of butazolidin on the course of diabetes mellitus. Polski
tygod.lek. 15 no.13:470-471 28 Mr '60.

1. Z Oddzialu "B" Chorob Wewnetrznych Szpitala Wojewodzkiego w
Opolu; ordynator: dr. med. Wojciech Pedich.
(DIABETES MELLITUS ther.)
(PHENYLBUTAZONE ther.)

PED', D.A.; TURKETI, Z.L.; POGOSYAN, Kh.P., otv. red.; BLINNIKOV, L.V.,
red.; ZARKH, I.M., tekhn. red.

[Distribution of the diurnal range of air temperature variations
in the U.S.S.R.] Raspredelenie sutochnykh amplitud temperatury
vozdukh na territorii SSSR. Moskva, Gidrometeor.izd-vo (otd-nie)
1961. 167 p. (MIRA 15:1)
(Atmospheric temperature)

PED', D.A.; TURKETII, Z.L.

Characteristics of the distribution of diurnal air temperature
amplitudes. Meteor. i gidrol. no. 11:37-41 N '61. (MIRA 14:10)
(Atmospheric temperature)

PED', D.A.; PEDULOVA, M.N.

Deformation of planetary high-level frontal zones of natural synop-
tic periods. Trudy TSIP no.108:58-65 '61. (MIRA 14:5)
(Weather forecasting)

PED', D.A.; SIDOCHENKO, T.V.

Method for seasonal forecasting of the temperature anomaly of air.

Trudy TSIP no.109:15-40 '61.

(MIRA 14:5)

(Weather forecasting)

PED', D.A.; KOZEL'TSEVA, V.F.; CHISTYAKOVA, Ye.M.

Method of forecasting the mean monthly air temperature anomaly based
on the consideration of types of processes observed during the
preceding months. Trudy TSIP no.109:41-58 '61. (MIRA 14:5)
(Weather forecasting)

FED', D.A.; TURKETTI, Z.L.; FOGOSYAN, Kh.P., prof., red.; YASNOGORODSKAYA,
M.M., red.; FLAUM, M.Ya., tekhn. red.

[Atlas of daily ranges of air temperature in the U.S.S.R.] Atlas
sutochrykh amplitud temperatury vozdukha v SSSR, Pod red. Kh.P.
Pogosiana. Leningrad, Gidrometeorizdat, 1962. 101 p.
(MIRA 15:6)

(Atmospheric temperature)

S/169/62/000/007/109/149
D228/D307

AUTHORS: Vasyukov, K. N., Zverev, N. I. and Ped', D. A.

TITLE: Using the principle of analogousness when forecasting
synoptic processes and the weather for five days

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 7, 1962, 48, ab-
stract 7B257 (Tr. Tsentr. in-ta prognozov, no. 116,
1962, 15-23)

TEXT: The N-500 values for a standard grid of points, located ev-
ery 40° of latitude and 120° of longitude on the territory, bounded
by 36°W, 84°E, 76°N, and 36°W, were taken from the average maps
for natural synoptic processes (NSP) in January and February, 1938-
1955. After this the signs of the geopotential differences, respec-
tively characterizing the zonal and the meridional flow components,
were determined for meridionally and latitudinally neighboring
points. The values +1, 0, and -1 were respectively ascribed to
positive, zero and negative differences. The resulting magnitudes
of the meridional and the zonal wind components for all NSP were

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Using the principle ...

printed on tape. The analogs of the N-500 averages for the parameters ρ_φ and ρ_λ , characterizing the similarity of fields with respect to their circulatory features, were selected for the first 20 maps by means of the electronic computer "Pogoda". The values of ρ_φ and ρ_λ were calculated from the formulas:

$$\rho_\varphi = \frac{n_{\varphi+} - n_{\varphi-}}{n_{\varphi+} + n_{\varphi-}}, \quad \rho_\lambda = \frac{n_{\lambda+} - n_{\lambda-}}{n_{\lambda+} + n_{\lambda-}}$$

where $n_{\varphi+}$, $n_{\varphi-}$, $n_{\lambda+}$, $n_{\lambda-}$ is the number of cases when the signs of the meridional (n_φ) and the zonal (n_λ) flow components in two comparable N-500 fields of NSP do, or do not, coincide. The comparison of all NSP with the original 20 allowed the distribution of the degree of analogy for the fields of the 500-mb surface's January geopotential to be obtained from the parameters of ρ_φ and ρ_λ . It also

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and $\rho_{\Sigma} = \rho_{\Sigma} + \rho_{\Lambda}$. As the geometric likeness increases, the analogousness in the development of atmospheric processes in subsequent NSP grows generally. But in a number of examples it is shown, too, that the factor of geometric analogy, though it is of great significance in establishing the analogousness of atmospheric processes, does not always give practically valuable pointers to the future development of processes. In some cases originally similar processes subsequently change into non-analogs. Using modern computers it is possible by means of the analogy parameters of ρ_{Σ} , ρ_{Λ} , and $\rho_{\Sigma} = \rho_{\Sigma} + \rho_{\Lambda}$ to take into account objectively the development history of atmospheric processes, to solve problems connected with the choice of analogs, and so forth, which is necessary in order to forecast the weather for 3 - 7 days. [Abstracter's note: Complete translation.]

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S/169/62/000/007/110/149
D228/D307

AUTHORS: Vasyukov, K. N., Zverev, N. I. and Ped', D. A.
TITLE: Application of empirical functions of influence for forecasting mean monthly air temperature anomalies
PERIODICAL: Referativnyy zhurnal Geofizika, no. 7, 1962, 48-49, abstract 7B258 (Tr. Tsentr. in-ta prognozov, no. 116, 1962, 24-33)

TEXT: Particular synchronous and asynchronous (December-January, June-July) factors of correlation between the Moscow air temperature and the temperature (pressure) at a number of points were determined for January and July in order to investigate the influence of centers of atmospheric action (CAA) on the formation of mean monthly air temperature anomalies in the USSR's European territory and in order to derive possible prognostic relations (by preparing the equation of multiple regression). These points were chosen for the characteristic of the intensity of CAA and were located as follows: Ponta Delgada (Azores), Honolulu (Hawaiian Islands), Be-

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Application of empirical ...

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ultaneous influence of all CAA by means of empirical functions of influence. The problem is simplified by finding the asynchronous relations (with a month's displacement) between the state of some CAA, expressed by fluctuations in the mean monthly air temperature anomaly at Ponta Delgada, Beruferdur, Honolulu, Irkutsk, and Tashkent, and the mean monthly air temperature anomaly on the USSR's European territory according to the data of 11 stations for 1900-1940 (Arkhangel'sk, Leningrad, Syktyvkar, Riga, Moscow, Yelabuga, Urenburg, Zemetchino, Volgograd, Rostov-on-Don, Odessa). Allowance for the influence of CAA on the temperature conditions of the USSR's European territory was made by dividing all the original data into warm (April -September) and cold (October-March) periods, whose empirical functions of influence were determined separately. Coefficients of the empirical functions of influence are cited for each of the 11 points on the USSR's European territory; they were obtained on the grounds of the data's climatic processing. The values of the mean monthly air temperature anomaly (Δt) predictable for each point and month are calculated from the multiple regression equation : $\Delta t = \alpha_0 \Delta t_0 + \alpha_1 \Delta t_1 + \alpha_2 \Delta t_2 + \alpha_3 \Delta t_3 + \alpha_4 \Delta t_4$.

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Here $\alpha_0, \alpha_1, \alpha_2, \alpha_3, \alpha_4$ are the respective coefficients of the empirical functions of influence for a given station on the USSR's European territory and for the stations of each of the four CAA: the Azores and Honolulu highs, the Iceland low [Abstracter's note: It is assumed that 'nelandskoy' should read 'islandskoy' 7, the Siberian high for the cold season, and the Mid-Asiatic low for the warm season. $\Delta t_0, \Delta t_1, \Delta t_2, \Delta t_3, \Delta t_4$ are the respective mean monthly air temperature anomalies at the same points for the preceding month. 18 out of 22 of the forecasts for the mean monthly air temperature anomaly were proved to be correct. 23 references. [Abstracter's note: Complete translation.]

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S/169/62/000/008/048/090
E073/E535

AUTHORS: Ped', D.A. and Sidochenko, T.V.

TITLE: On the forecasting of anomalies of the air temperature and the quantity of precipitations for a month

PERIODICAL: Referativnyy zhurnal, Geofizika, no.8, 1962, 52-53, abstract 8B356 (Tr. Tsent. in-ta prognozov, 1962, no.116, 41-64)

TEXT: The method of forecasting anomalies of the average monthly air temperature in Western Siberia is presented, which is based on calculating the intensity of the zonal circulation of the atmosphere of the previous months and a recommendation is made for forecasting the monthly quantity of precipitates in the European territory of the USSR and Western Siberia. Data were used on the anomalies on the mean monthly air temperature during 1938-1958 and the quantity of rainfall during 1891 to 1954 in stations uniformly distributed throughout the European territory of the Soviet Union and Western Siberia, as well as indices of the zonal circulation of the atmosphere determined according to AT-500 charts for a characteristic region 40°-72° N lat. and

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20° W long. to 80° E long. during 1958-1958. In obtaining asynchronous relations for forecasting the anomalies of the temperature with various advance prediction times, earlier obtained relations are applied (see RZhGfiz, 1961, 9B240). The asynchronous relations between the intensity of the zonal circulation of the atmosphere (I_{W-E}) above a characteristic region in the preceding months and the anomalies of the mean monthly air temperature (Δt) and the succeeding months are plotted graphically for each month and station. The degree of inter-relation was determined by means of a parameter ρ (on the graphs Δt , I_{W-E} a straight line was drawn corresponding to ρ_{max}). The monthly ρ values are given for each of the 12 selected stations in Western Siberia with a prediction time of 20 days, 10 days and zero days. Analytically the relations are expressed by the formula $\Delta t_i = -a_i I_{W-E} + b_i$ (where a_i and b_i are some statistically determined parameters for the given station and month as a function of the prediction time), which permits determining the anomaly of the average monthly air temperature with various prediction times for various values of the index of

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the zonal circulation of the atmosphere. During one year the forecasts with a prediction time of 20, 10 and zero days had a reliability as regards r of 0.43, 0.40 and 0.41. The quality of the forecasting can be somewhat improved by selecting relations which have a high degree of reliability. An example is given of the compilation of forecasts of anomalies of the average monthly air temperature with various prediction times for Western Siberia. From the anomalies of the monthly average air temperature during 1891 to 1958, the asynchronous nature in the appearance of an anomaly of one sign or another is investigated for the European territory of the Soviet Union (from the data of 22 stations), and for Western Siberia (from the data of 12 stations). Coefficients of correlation and parameters of the equations of regression between the number of stations with anomalies of the same sign in the mean monthly air temperature of the European territory of the Soviet Union and Western Siberia are obtained. The highest values of the correlation coefficient ($r = 0.4-0.7$) were observed for the cold half of the year, the lowest for the warm part of the year. The regression equations, by means of which the number of stations with the corresponding anomalies in Western Siberia are determined

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from the data of the stations of the European part of the Soviet Union, are of the type $n_{WS} = kn_E + \ell$, where n_{WS} and n_E are, respectively, the number of stations with anomalies in the mean monthly air temperature of the same sign in Western Siberia and in the European territory of the Soviet Union, k and ℓ - parameters determined by statistical means. Working out of direct relations between the intensity of the zonal or meridional circulation and precipitations does not yield positive results. Determination of the anomalies of the average monthly quantity of precipitations was carried out by applying the anticipated anomaly in the mean monthly air temperature. Synchronous relations were obtained between the predominant graduated values of the rainfall (below the specified value, corresponding to the specified value and above the specified value) and the sign Δt . The sequence of compiling forecasts for rainfalls for a month is described. The monthly probability of appearance of precipitates of a given graduation in the case of differing anomalies of the average monthly air temperature in a number of stations in the European territory of the Soviet Union and in Western Siberia are given. Improvement of the here presented method of forecasting of

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anomalies of the average monthly air temperature and the quantity
of precipitates can be carried out by taking into consideration
the circulation conditions throughout the entire northern
hemisphere, the influence of the underlying surface and other
factors.
20 references.

[Abstractor's note: Complete translation.]

Card 5/5

L 04918-67 ENR(1) GW

ACC NR: AT6028444

SOURCE CODE: UR/2546/66/000/153/0022/0040

AUTHOR: Vasyukov, K. A.; Fed', D. A.

ORG: none

TITLE: Method of forecasting an anomaly of the mean monthly air temperature with consideration of its intensity in the Northern Hemisphere

SOURCE: Moscow Tsentral'nyy institut prognozov. Trody, no. 153, 1966. Statisticheskiye Metody dolgosrochnogo prognoza pogody (Statistical methods of long-range weather forecasting), 22-40

TOPIC TAGS: long range weather forecasting, air temperature, atmospheric temperature, atmospheric current

ABSTRACT: In this article the authors proceed from the hypothesis that an anomaly of the mean monthly air temperature in the Soviet Union is determined by its anomalous development during preceding months over the entire Northern Hemisphere. The forecasting method must include information from the entire Northern Hemisphere. The gradients of the mean monthly air temperature over the hemisphere which were used as predictors met this condition. The proposed calculation method of forecasting had the form

$$\Delta t = \sum_{i=1}^6 \alpha_i \text{grad}_{i-1} \Delta T_i + \sum_{j=1}^6 \beta_j \text{grad}_N \Delta T_j + \sum_{k=1}^6 \gamma_k \text{grad}_S \Delta T_k + \alpha_0 \Delta T_0, \quad (1)$$

where Δt is the expected anomaly of the mean monthly air temperature at a certain point in the Soviet Union with a one-month predictability; α_i , β_j , γ_k are coefficients.

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L 04918-67

ACC NR: AT6028444

clients of empirical influence functions for corresponding components of the temperature gradients; $\text{grad}_{\text{zone}} \Delta T_i$ is the zonal gradient of the temperature anomaly between the i-th pair of selected points taken in a south-north direction; $\text{grad}_N \Delta T_j$ are meridional gradients of the temperature anomaly for northern regions of the hemisphere taken between the same points in an east-west direction; $\text{grad}_S \Delta T_k$ are meridional gradients of the temperature anomaly for southern regions of the hemisphere taken in an east-west direction; $\alpha_0, \Delta T_0$ are analogous values pertaining to the same station for which ΔT is found. To compile a forecast by method (1) it is necessary to obtain corresponding data of the mean monthly air temperature at the station level at 12 points of the Northern Hemisphere. For each of these points a table is used to find the monthly temperature anomaly which is then used in the calculations in the form of zonal and meridional differences. Then by means of a table corresponding to a given season for each point of interest in the Soviet Union, the future anomaly of the mean monthly air temperature is found as the sum of 19 paired products of the corresponding weights for each of the indicated differences. The 19th term will be the paired product of the temperature anomaly at a given station ΔT_0 and its weight α_0 . The calculations should be carried out twice to avoid additional errors. The temperature field obtained is the probability forecast of an anomaly of the mean monthly air temperature in the Soviet Union, the deviation of which from the actual for each point will be minimal in the sense of least-squares. The proposed method permits, to a certain extent, taking into account the characteristics of general circulation which appear in the atmosphere of the entire Northern Hemisphere. Orig. art. has: 1 formula, 5 tables, and 1 figure.

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 005/ OTH REF: 005
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ACC NR: AT6028446

each season and of the air temperature anomaly were plotted to establish these relations and to determine the active, dynamically significant regions. On the basis of the dynamically significant regions found it is possible to compile forecasts of the seasonal air temperature anomaly. Such forecasts can be of two types: the sign of the anomaly alone, or the sign and magnitude of the air temperature anomaly. The forecast of the sign of the air temperature anomaly with respect to a dynamically significant region reduces to the following: the central part of the region with the greatest relation is selected and the values of the air temperature anomaly in it during the two months are examined; then the sign of the anomaly is forecasted. To calculate the expected sign and magnitude of the air temperature anomaly, the latter is calculated for two months at stations of the Northern Hemisphere which are used for the forecast; the forecast of the sign of the seasonal air temperature anomaly is compiled for stations of the European part of the Soviet Union; then the seasonal air temperature anomaly is calculated at two dynamically significant regions for stations in the European part of the Soviet Union. The obtained forecasts are matched and the more reliable one is selected. The value of the anomaly based on the forecasts was close to the actual values, the absolute error being on the average, about 1.6° . Consequently, these forecasts are completely satisfactory. In the future the authors propose to make a more complete calculation of the initial information from the entire Northern Hemisphere and not only at individually selected regions. Orig. art. has: 3 tables and 7 figures.

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 003

Card 2/2

ACC NR: AT6028448

SOURCE CODE: UR/2546/66/000/153/0069/0078

AUTHOR: Pad', D. A.

ORG: none

TITLE: Statistical method of forecasting seasonal air temperature anomalies ✓✓

SOURCE: Moscow. Tsentral'nyy institut prognozov. Trudy, no. 153, 1966.
Statisticheskiye metody dolgochnogo prognoza pogody (Statistical methods of long-range weather forecasting), 69-78

TOPIC TAGS: air temperature, statistic analysis, long range weather forecasting,
atmospheric current, *atmospheric temperature*

ABSTRACT: A method is proposed for forecasting seasonal (2-month periods) air temperature anomalies in European Russia based on the use of empirical influence functions which take into account the data of the air temperature in the Northern Hemisphere. Fourteen stations were selected in European Russia for which relations have been established with respect to forecasting seasonal air temperature anomalies. It was assumed when compiling the forecasts that the seasonal anomaly in European Russia depended largely on its distribution in the Northern Hemisphere during synchronous and asynchronous periods of time. Hence any fluctuations in its distribution should affect the formation of the temperature field in European Russia. In the investigation the author used the air temperature at the earth's surface since it is an index of the influence of various factors and, in particular, of the thermal conditions of
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the subjacent surface and atmospheric circulation. By using this index an attempt was made to take into account the fluctuations of the general circulation of the atmosphere and to some extent the effect of the thermal conditions of the subjacent surface. To compile the forecasts of the seasonal air temperature anomaly with a monthly prediction, the author used the relations which, in an analytical form are:

$$\Delta T = \alpha_0 \Delta T_0 + \sum_{i=1}^{10} \alpha_i \Delta T_i,$$

where ΔT is the expected seasonal air temperature anomaly; ΔT_0 and ΔT_i is the mean anomaly for the 2 months preceding the expected season; α_0 and α_i are the coefficients of the empirical influence functions obtained by the methods of least squares;

ΔT_0 and ΔT_i for forecasts with a monthly prediction are taken with a 1-month shift in comparison with ΔT . In this formula α_0 and ΔT_0 pertain to stations in European Russia for which ΔT is calculated, and α_i and ΔT_i pertain to points situated in the Northern Hemisphere. Coefficients α_0 and α_i were determined from 1901-1950 data. An analysis of the coefficients showed that their value substantially depends upon the season and the value of α of the station for which the forecast is compiled. The proposed method of forecasting could not be checked out owing to the lack of information from foreign stations. It is intended to improve this method in the future by improving the physical model of the method and by incorporating data on the thermal state of the subjacent surface and information from several levels of the atmosphere in the Northern Hemisphere. In conclusion, the author thanks junior scientific associate L. I. Kashleva for her extensive work on computing the coefficients of the

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empirical influence functions on the "Setun" computer. Orig. art. has: 4
formulas.

SUB CODE: 04/ SUM DATE: none/ ORIG REF: 009/ OTH REF: 003

Card 3/3

VASYUKOV, K.A., kand. fiz.-matem. nauk; ZVEREV, N.I., kand. fiz.-matem.
nauk; PED', D.A., kand. geograf. nauk

Rhythms in the atmosphere and some methods of evaluating them.
Meteor. i gidrol. no.1:47-49 Ja '65. (MIRA 18:2)

1. TSentral'nyy institut prognozov.

VASYUKOV, K.A.; ZWERNY, K.I.; HCN, 1965

Statistical method of forecasting the air temperature and the
quantity of precipitation for a month. Study 20. 1965. 165.

CHISTYAKOV, A.D.; BURKOVA, M.V.; ORLOVA, Ye.M.; GLAZOVA, O.P.;
PED', D.A.; BENIAND, M.Ye.; ABRAMOVICH, K.G.; POPOVA,
T.P.; MATVEYEV, L.T.; BACHURINA, A.A.; LEEDEVA, N.V.;
PESKOV, B.Ye.; ROMANOV, N.N.; VOLEVAKHA, N.M.; PCHELKO,
I.G.; PETRENKO, N.V.; KOSHELENKO, I.V.; PINUS, N.Z.;
SHMETER, S.M.; BATAKYEVA, T.F.; MININA, L.S.; BEL'SKAYA,
N.N., nauchn. red.; ZVEREVA, N.I., nauchn. red.;
KURGANSKAYA, V.M., nauchn. red.; MERTSALOVA, A.N., nauchn.
red.; TOMASHEVICH, L.V., nauchn. red.; SAGATOVSKIY, N.V.,
otv. red.; KOTIKOVSKAYA, A.B., red.

[Manual of short-range weather forecasting] Rukovodstvo
po kratkosrochnym prognozam pogody. Leningrad, Gidro-
meteoizdat. Pt.2. Izd.2. 1965. 421 p.

(MIRA 18:8)

1. Moscow. Tsentral'nyy institut prognozov.

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ABSTRACT: A method has been proposed for delimiting regions of an active thermal state in the northern hemisphere and their influence on the formation of the seasonal air temperature anomaly in the European SSSR. The statistical method used is applicable only in forecasting the air temperature anomaly for the second half of summer (July-August). The investigation was based on data for 1901-1950. The method used was determination of active regions of thermal influence on the formation of air temperature anomalies in the European SSSR in synchronous and asynchronous periods. Only five stations were used in determination of these regions. The synchronous and asynchronous periods are used in predicting the air temperature anomaly. The allowance for the thermal influence of

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